

## **AMENDMENTS TO THE CLAIMS**

Claims 1-8 (cancelled)

9. (original) An assembly comprising a surface mounted electronic device and a printed circuit board defining an assembly gap width between the device and the printed circuit board before solder reflow, said surface mounted electronic device comprising an organic connecting substrate having terminal leads or solder bumps and having a bottom surface facing the printed circuit board, said bottom surface comprising a semi-solid or solid thermoplastic adhesive attached to a portion of the bottom surface, wherein the terminal leads or solder bumps are mounted on landing pads on the printed circuit board, and the thermoplastic adhesive has a height which is less than the assembly gap width to provide a second gap between the thermoplastic adhesive and the printed circuit board.

10. (original) The assembly of claim 9, wherein the thermoplastic adhesive has a height which is at least 25% and no more than 90% of the assembly gap width.

11. (original) The assembly of claim 10, wherein the thermoplastic adhesive height is at least 40% of the assembly gap width.

12. (currently amended) The assembly of claim 9, wherein the thermoplastic adhesive height is no more than 70% of the assembly gap ~~height~~ width.

13. (original) The assembly of claim 9, wherein the surface mounted electronic device is a leaded surface mounted electronic device.

14. (original) The assembly of claim 13, wherein the surface mounted electronic device is a PBGA,  $\mu$ BGA, flip chip BGA, stacked die BGA, or flex tape BGA.

15. (original) The assembly of claim 9, wherein the printed circuit board is flexible.

16. (original) The assembly of claim 9, wherein the printed circuit board is a material comprising a polyimide, polyester, polycyclohexylene terephthalates, liquid crystal polymers, polyphenylene sulfide, liquid crystal polymers, polyether sulfone, polyether ether ketone, aramid, polycarbonate or polyarylate, phenolic resin impregnated paper under the FR-2 classification, a epoxy resin impregnated paper under the FR-3 classification, CEM-1, and glass fibers impregnated with epoxy resins under the FR-4 classification.

17. (original) The assembly of claim 16, wherein the printed circuit board is a material comprising a polyimide polymer, or phenolic resin impregnated paper under the FR-2 classification, a epoxy resin impregnated paper under the FR-3 classification, CEM-1, and glass fibers impregnated with epoxy resins under the FR-4 classification., or polycyclohexylene terephthalates.

18. (original) The assembly of claim 9, wherein the thermoplastic adhesive is electrically non-conducting.

19. (original) The assembly of claim 9, wherein the thermoplastic adhesive is applied as a solid or semi-solid to an available surface on said bottom surface.

20. (original) The assembly of claim 9, wherein the surface mounted electronic device comprises a BGA having an array of solder bumps on said bottom surface of the connecting substrate, and the thermoplastic adhesive is applied as strips spanning the length of at least two perimeter edges on said bottom surface.

21. (original) The assembly of claim 9, wherein the surface mounted electronic device comprises a BGA having an array of solder bumps on said bottom surface of the connecting substrate, and the thermoplastic adhesive is applied on each corner of the bottom surface.

22. (currently amended) The assembly of claim 9, wherein the surface mounted electronic device comprises a BGA having an array of solder bumps on said bottom

surface of the connecting substrate, and the thermoplastic adhesive is applied between each of the four corners on the bottom surface.

23. (original) The assembly of claim 9, wherein the thermoplastic adhesive is attached to the connecting substrate by application of heat to the thermoplastic adhesive, the connecting substrate, or both, sufficient to render the thermoplastic adhesive tacky.

24. (original) The assembly of claim 9, wherein the thermoplastic adhesive is attached to the connecting substrate by application of heat to the thermoplastic adhesive, the connecting substrate, or both, laying down the thermoplastic adhesive on an available surface of the connecting substrate, followed by applying pressure to the thermoplastic adhesive.

25. (original) The assembly of claim 9, wherein the thermoplastic adhesive is attached to the connecting substrate through a pressure sensitive adhesive by application of pressure to the thermoplastic adhesive .

26. (original) The assembly of claim 9, wherein the thermoplastic adhesive has a complex viscosity of at least 50 Pa•s, and is a solid or semi-solid at 55°C.

27. (original) The assembly of claim 26, wherein the thermoplastic adhesive has a complex viscosity of at least 80 Pa•s, and is a solid at 80°C.

28. (original) The assembly of claim 27, wherein the thermoplastic adhesive is a solid or semi-solid at 100°C.

29. (original) The assembly of claim 9, wherein the thermoplastic adhesive has a storage modulus of at least 100 Pa at temperatures of up to 125°C, as measured in a parallel plate rheometry test at a 1" circular plate gap width of 1mm, and a heat rate of 2°C per minute, and a shear rate of 0.1 radians per second.

30. (original) The assembly of claim 29, wherein the thermoplastic adhesive has a storage modulus of at least 1000 Pa at temperatures up to 125°C.
31. (original) The assembly of claim 9, wherein the thermoplastic adhesive has a complex viscosity of at least 50 Pa•s at any temperature ranging from 140°C to 220°C, as measured in a parallel plate rheometry test at a 1" circular plate gap width of 1mm, and a heat rate of 2°C per minute starting at 140°C, and at a shear rate of 0.1 radians per second.
32. (original) The assembly of claim 31, wherein the thermoplastic adhesive has a complex viscosity of at least 80 Pa•s at any temperature ranging from 140°C to 220°C.
33. (original) The assembly of claim 32, wherein the thermoplastic adhesive has a complex viscosity of at least 100 Pa•s at any temperature ranging from 140°C to 220°C.
34. (original) The assembly of claim 33, wherein the thermoplastic adhesive has a complex viscosity of at least 175 Pa•s at any temperature ranging from 140°C to 220°C.
35. (original) The assembly of claim 31, wherein the thermoplastic adhesive has a complex viscosity which does not exceed 5000 Pa•s at 220°C.
36. (original) The assembly of claim 35, wherein the thermoplastic adhesive has a complex viscosity which does not exceed 2500 Pa•s at 220°C.
37. (original) The assembly of claim 9, wherein the thermoplastic adhesive has a tensile elongation of at least 50%.
38. (original) The assembly of claim 37, wherein the thermoplastic adhesive has a tensile elongation of at least 100%.

39. (original) The assembly of claim 38, wherein the thermoplastic adhesive has a tensile elongation of at least 150%.
40. (original) The assembly of claim 9, wherein the thermoplastic adhesive has a Young's modulus ranging from 5 MPa to 2000 MPa.
41. (original) The assembly of claim 40, wherein the thermoplastic adhesive has a Young's modulus ranging from 70 MPa to 300 MPa.
42. (currently amended) The ~~surface mount device~~ assembly of claim 9, wherein the thermoplastic adhesive has a tensile strength of at least 500 psi to 4000 psi.
43. (original) The assembly of claim 9, wherein the thermoplastic adhesive comprises a functionalized polyolefin.
44. (original) The assembly of claim 43, wherein the amount of the functionalized polyolefin is at least 20 wt.%, based on the weight of the thermoplastic adhesive.
45. (original) The assembly of claim 43, wherein the functionalized polyolefin is functionalized with acid groups, amine groups, or a combination thereof.
46. (original) The assembly of claim 45, wherein the functionalized polyolefin is functionalized with a functionalizing agent comprising unsaturated mono- or polycarboxylic acid monomers or the acid derivatives thereof.
47. (original) The assembly of claim 46, wherein the functionalizing agent comprises itaconic acid, acrylic acid, methacrylic acid, ethylacrylic acid, butylacrylic acid, maleic acid, the ester and anhydride derivatives thereof, or vinyl acetate.
48. (original) The assembly of claim 43, wherein the functionalized polyolefin comprises an amine functionalized polyolefin.

49. (original) The assembly of claim 9, wherein the thermoplastic adhesive comprises a polyamide polymer.

50. (original) The assembly of claim 49, wherein the thermoplastic adhesive comprises a functionalized polyamide polymer.

51. (original) The assembly of claim 49, wherein the polyamide has a complex viscosity ranging from 2000 cps to 12,000 cps at 190°C.

52. (original) The assembly of claim 49, wherein the polyamide has a number average molecular weight  $M_n$  within a range of 500 and up to 8000.

53. (original) The assembly of claim 49, wherein the polyamide has a number average molecular weight  $M_n$  within a range of 5000 to 100,000.

54. (original) The assembly of claim 9, wherein the thermoplastic adhesive comprises (A) from 5% to 98% by weight of a functionalized polyolefin, and (B) from 2% to 95% by weight of a polyamide compound.

55. (original) The assembly of claim 54, wherein the weight ratio of the functionalized polyolefin to the polyamide compound ranges from 98:2 to 40:60, respectively.

Claims 56-92 (cancelled)